

Mental Physiology.

La Revue Scientifique 1876, p. 169 Hughling Jackson.

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Insanity is often transient. After epilepsy it is especially apt to occur. According to Reynold 7 per cent of nervous disorders belong to epilepsy. Bucknill and Tuck state that 6 per cent of the cases of insanity in the island are due to epilepsy. The insanity of epilepsy is often of a violent nature and comes thus in conflict with the law. I have observed the premonitory symptoms of epilepsy to be sometimes very light, being frequently *preceded* by an access of laughter. It is best to confine our observations to light cases, since these are generally followed by more marked mental derangement. Three grades of epilepsy it is well to distinguish; namely: *vertigo*, *petit mal*, and *grand mal*.

1st. Epilepsy does not only present loss of consciousness but may present any grade of trouble of consciousness. The epileptic may feel only the paroxysm at the epigastrium.

2nd. The epileptic paroxysm may present every degree of gravity, from the simple swimming of the head and slight intellectual confusion to the most violent spasms and profoundest coma.

3rd. The lightest cases are worst for the intelligence. There may be cases where consciousness is lost the first thing, others where it is not lost at all.

P. 171 Sometimes, when the attacks are slight & quick

over, they are not regarded, and grotesque actions and unconnected talk is especially in the female, wrongly ascribed to hysteria; and in the violent man to criminal intentions. The mental trouble instead of departing soon after the fit, may prolong itself especially if the fits follow in frequent succession and sometimes become permanent and assume the form of idiocy. Epileptic insanity is well known to alienists and Dr. Thorne describes some forms of it, as masked epilepsy. The mental aberrations following epilepsy, I would call *mental automatism*, they seem to be due to an epileptic dream. An epileptic may have at one time, convulsions of the muscular system and at another time convulsions of the ideas and gestures. The mental automatism is sometimes preceded by a fit exceedingly short, and sometimes no fit at all can be discovered as having taken place. The mental automatism is due to excessive action of the inferior nervous centres (?) who substitute themselves in place of the superior centres. After an epileptic fit, 2 conditions present themselves; 1st, defect or aberration of mind and 2nd mental automatism. As Anstie has well described when the superior brain centres act deficiently, then the inferior will act excessively.

P. 172 Spencer shows evolution to proceed from the simple to the complex, and that in case of the brain consciousness is the crowning point of cerebral evolution. Cerebral dissolution or involution would proceed in a retrograde manner from the complex to the more simple. As now the change from the one to the other would be less marked so there would be more chance for mental automatism. Interrogating a patient, he may at once begin to laugh, and next begin chewing a piece of paper. Another holding a candle will droop his head and turn pale. Another will feel the pulse of his comrade, or turn his eyes to the left, turn pale and sob a few times.

P. 173 One patient, when he had a violent attack, he

would sleep for several hours, after a light attack he would be somnambule.

—Some patients will experience a frightful odor before the attack comes on, others will have colored visions, which are generally red. A patient says: at first I perceive with my right eye ships of various colors, green, yellow and red, lasting 20 or 30 minutes, then I lose sight and feeling, make noises as if afraid, become quiet and have convulsions lasting from 20 to 40 minutes, and when I calm down again I commence talking like a fool.

186 A woman not feeling well, went to get some bread for her child, when she cut her own arm instead of the bread. Before marriage she had had sometimes a fainting spell, when she fell and lost consciousness without however having had any convulsions. Another person while still not himself would call in different stores looking for his hat, also acting correctly automatically while yet unconscious. Heredity has a great influence in the production of the malady.

Page 205. Nervous complaints.

M. B. Ball. Intellectual labor coincides with phenomena that are purely physical. According to Platon man is a spirit who makes use of a body to serve him

206 Chaptal calls urea the cindres of the economy, Cabanis, thought, the secretion of the brain. Brain labor is accompanied with increased oxydation of braintissue, found as urea & phosphates in the urine. Thought, may be unconscious though Descartes attributed automatism to animals only, but it applies to man as well.

207 As thought may be taking place unconsciously just so it may take place independent of the will. Buffon defines Genius to be a conclusion about which the mind has been unconsciously working for years probably. Dreams

present also wholly unconscious action of the brain. There are persons that are confounding their dreams with the occurrences of real life; and somnambulism offers a complete instance of unconscious cerebration. The servant of Gassendi waited on the table when in that state, Condillac wrote some of his finest pages when somnambule.

208 A fool may be said to dream with his eyes open and it may appear somewhat humiliating to think that Rousseau when he wrote the finest pages of his confessions was a fool. There is an intimate connexion between the movements of the muscles and workings of the mind. Persons beings the subjects of convulsive affections, have sometimes their intellectual function all on a sudden disturbed. These cases might be called convulsions of the intelligence. A furious Idiot became quieted by being put to sawing wood every day. A hemiplegic girl lost suddenly her senses when she recovered the use of her limbs.

209 The nervous fluid travels 33 metres a second, and much less, nearer to the centres of the brain. (To observe the quickness of mental perception, the eye might be fixed upon a hole in a screen behind which a white paper with a red spot was rapidly being moved, and the rapidity registered. S.)

As there is a tetanus of the motor system so there may also be a tetanus of the intelligence. There is such a thing as sympathetic insanity. If a nervous trunk is cut the stump will become more irritable; so with a person dying the irritability of the nerves will recede from the periphery towards the centre, Insanity may be the sequel of epilepsy, hysteria and poisons.

PSYCHOLOGY AS A NATURAL SCIENCE.

Revue Scientifique 1877 page 725.

M. J. Delboef.

1 Vol. 8 vo. Germer Bailliere.

The theory of evolution has opened a new horizon unknown to ancient philosophers. The different species must be considered as so many steps in the developement of a single being. Physical and chemical phenomena are reduced to the single one of movement. The progress accomplished furnishes us two words evolution & synthesis.

Psychology has an objective side which admits the application of measure and experimentation. It was biology that furnished the idea of evolution to psychology. One science has always to be elaborated before another can make progress.

Origin of conscious judgement.

All thought is an affirmation, or a judgement more or less explicit. Of elementary judgments some of them are without and some within us; to the former belong space, time, form, extension, motion; to the latter belong, taste, smell, color, hearing and temperature.

What we believe to be a sensation is but a conclusion of our judgement, as may be proved in a darkened chamber where two rays of light are admitted, one through a colored glass; when the shadow of a stick held in the middle of the room into the colored ray is viewed through a tube, the substitution of an other colored glass will pass unperceived. The judgement may thus be deceived. The cause of the error is neither physical nor physiological but psychical.

Form, size, and distance of objects are furnished not direct by the senses. It is here also the eye which helps us to the facts to form a judgement. The eye is used here as a muscular organ as well as an organ of vision. Our judgement is based on the sensation of motility and muscular effort, A paralysed or enfeebled muscle will deceive, as to the distance etc. Our idea of color is due to a series of unconscious judgements.

Sensation.

According to the law of Weber sensation increases in an arithmetical progression, while the excitation stands in a geometrical progression. Or sensation is proportional to a logarithmic excitation. In order to appreciate an additional weight it must exceed one-seventeenth of the first weight. To appreciate an addition of light it must be equal to an increase of one-hundredth part. The cause of sensation lies in the rupture of the equilibrium between the individual and its environs. A sensation is agreeable or disagreeable, as it approaches or removes an organism from the state of equilibrium. This is especially evident in regard to the sense of temperature. It is the atomic and molecular movements of bodies which give rise to the physical states, sonorous, calorific, magnetic vibrations and chemical affinities. The various simple bodies differ only in having a particular constitutional movement of their atoms. Psychical phenomena must be considered as an especial mode of transformed force. A sensitive being may be compared to an elastic sphere which will only change its dimension according as its medium becomes denser or lighter. If we think an organism so constituted that an impression however slight will leave its trace behind, we may conceive how impressions received in a certain direction will become more and more facile of production and finally create an especial organ. Thus the luminous

wave would create the eye, the sonorous wave the ear and the chemical vibrations of atoms would create taste and smell. Man is devoid of an organ for receiving electric and magnetic vibrations of the atoms constituting the magnet. The senses correspond hence in their speciality to natural movements.

Pleasure as well as pain may be reduced to movement. A being supplied with organs is organized. The organs take cognizance of the present, while the rest of the body feels the past. These constitute hence two portions of an individuality and while one is ligated to the other the organism is endowed with a permanent psychical individuality. This individuality is complete as soon as the distinction of the me and not me is drawn which is the case when the animal is capable of giving itself a sensation, the first of which is that of motility. The internal movement of the will must feel a resistance at first which effort will become less after repetition until it becomes unconscious.

The consciousness of a movement lies in the appreciation of an effort. Thus voluntary motion becomes at last automatic by insensible gradations. This same law may be applied to all intellectual acts. Intelligence itself progresses towards automatism. Every automatic act was at first willed and conscious. As automatism progresses in man, just so the domain of the unconscious increases continually by the deposits of past ages and by hereditary transmission.

The great problem of psycho-physics is to render the duality of body and mind into a unity.

Etiology of Splenic fever.

(Contribution of Dr Koch. P. 732.)

Synonyms: *Maladie de sang*, *fièvre charbonneuse*, *pustule maligne*, *Milzbrand* etc.

This disease makes its appearance more readily after seasons of inundation, or when a season of dryness and heat succeeds one that is very rainy.

In the year 1863, Devaine announced to the Academy of Sciences that the blood of animals affected with splenic fever always contained filamentous bodies having a resemblance to those produced by butyric fermentation. He called them bacteridies in contra-distinction from the bacteries of vegetal and animal decomposition. The former are much longer (from 0,01 mm. to 0,05 mm.) and are not possessed of the movement of the latter. Cohn classified them under the head of *Schyzomecetes* and calls them *bacillus anthracis*. The spleen and lymphatic glands of a diseased animal contain the bacilles even in a larger number than the red blood globules.

Under artificial cultivation in aqueous humor at a temperature of 37 degrees in a humid atmosphere, the bacilles may be seen elongating 10 or a hundred-fold, forming an inextricable lace, finally their transparent contents becomes troubled by refringent granulations, when the fall to pieces, presenting nothing but the granulations or spores. Koch observed all these transformations under the microscope. At a temperature of 37 degrees, spores appear at the end of twenty hours, at a temperature of seventeen degrees they appear at the end of the second or third day. Under 12 degrees and above 46 degrees no developement takes place. If the medium is poor in oxygen the bacilles do not develop but fall to pieces constituting their death. If the liquid

is too much thinned with water the bacilles will not produce spores but perish before they get so far. A trace of carbolic acid is sufficient to arrest their developement. The spore surrounded by a gelatinous mass elongates into a bacille while the spore disappears.

The bacilles not containing any spores, die within a few days, while the spores contained in a liquid may develop yet after three months, while a piece of dried spleen containing spores produced the disease after four years. Other species of bacilles are found in putrifying healthy blood but they cannot produce splenic fever. In cold blooded animals, in the dog and in birds the disease cannot be communicated. If a female is affected, her blood alone is virulent, not that of the foetus. Insects may inoculate by their sting carrying spores or bacilles from diseased animals. Skinners and tanners become frequently affected with the pustule.

The most frequent way of inoculation is by the way of excorations on the backs of animals, but by way of the digestive and respiratory organs is also probable.

Nowgorod in the years 1867 to 1870 lost 56,000 sheep, cows and horses and 528 men; while in the district of Mansfelder in Saxony 186,000 heads perished. Cholera and typhoid fever have an analogy with splenic fever and some observers claim to have detected similar organisms in the blood of persons affected with such diseases.

Physiology of the nervous centre.

(M. Magnan. Page 737.)

The general paralysis of the alienated is generally accompanied by an invading lesion of the cortex cereberi, that is a diffuse peri-encephalitis. The lesions however

do not limite themselves to the outside centres having the piamater for point of departure but they may also attack with equal intensity the internal centres having the ependym of the ventricles for a point of departure. At first the bloodvessels become affected, and the nervous tubes and cells at a later date, and in a secondary manner. Alongside of the fundamental lesion a certain number of accessory lesions may be detected owing to an accentuation of the diseased action at certain points. Of this nature is the colloid degeneration.

The lesion is primarily situated in the interstitial tissue serving as the sheathe of the vessels and interposed between the nervous tubes. The parenchymatous lesion is secondarily. The frequent connection of cerebral and medullar lesion in the paralysed leads to the conclusion that there is a particular disposition in the whole nervous system, inducing multiple lesions. (The loss of function in one part induces disease and finally loss of function in an other part. Thus disease of the brain may induce disease of the spine. Scholl.)

Absinth.

Its action is spent on the intelligence, sensation and motricity. The delirium may alternate with epileptiform or epileptic convulsions. A dog having received five grammes of the essence of absinth into the stomach, is after an hour suddenly attacked with convulsions. The delirium is a veritable hallucination comparable to that seen in man from alcohol. Absinth seems to act by its presence while alcohol first induces disease.

Without confounding ordinary epilepsy with that from absinth, we must admit the perfect analogy between the convulsive attacks. The brain, medulla oblongata and spinal marrow, each play their distinctive part. The brain instead of being anemic as was first supposed at the commencement of the attack is very

much congested. Cerebral congestion and tonic convulsions are simultaneous as may be observed in a dog that has been trephined before the absinth was given. A metallic tube being surmounted by a glass tube fitted into the trephined opening & filled with tepid water to watch the oscillations of the column. By means of Marey's registering apparatus traces may be obtained.

Physiology.

Prof. Watters' Lectures 1858.

The sponges are yet a dispute among the learned, as to what kingdom they belong. The human organism is composed of the same elements as are found in inorganic nature; 4 of these elements are essential; as, C. H. O. N. the others are merely incidental. In order that there may be an organism, cells are necessary; and the above constituents are by cell-action formed into the proximate principles; of those there are 4 groups; the albuminous, the gelatinous, the oleaginous and amylaceous.

The 4 things essential to life are an: Organism, A fluid Plasma, Oxygen, & a certain Temperature. There is an exact relation between temperature and vitality. 112 degrees increase of temperature will burn, therefore a man frozen is not to be brought into a warm room;—warmth applied to a cold part increases suddenly, the molecular change in the part, before the blood can rush in to meet the demand and therefore the part is destroyed. In cold blooded animals somatic death takes place in consequence of change of temperature & somatic molecular death is thereby prevented. In the warm blooded, things are otherwise, the temperature being still high, molecular change proceeds, the part is destroyed & molecular death takes place.

The cell or an organism, or 4th condition is essential

for the production of a living organism. Nutrition and Secretion are carried on by cell action. Cells are produced in 2 ways by endogenesis, rupture of the parent cell, and exogenesis; hourglass contraction and budding. In epigenesis both parents contribute to the new being. The ovum is a cell of which the germinal vesicle is the nucleus and the germinal spot the nucleolus. The ovum rises, when mature, to the open surface in the ovisac causing absorption of it and of the tunica albuginea when the cilia of the fallopian tubes carry it into the uterus. This phenomenon need not necessarily take place at the menstrual epoch, hence ovulation may take place at any period, and fecundation at any place. The male furnishes the spermcell. In the tubuli seminiferi there are cells which have nuclei & others also nucleoli, which latter have tails and are the 3rd generation of the parent cell called spermatozoa. Some think the spermatozoa meet the ovum in the ovary. That absolute contract is necessary, is established. Every cell has its independent life.

The ovum is 1-250 to 1-120 of an inch in diameter. Generation takes place in virtue of the inherent laws of matter. There is no theological or knowing agency concerned in the process. A locomotive acts in virtue of its construction and without any knowledge on the part of the machinery. There are 2 Theories about generation, the one admits a vital principle; the other does not. The distoma illustrates this: the eggs are developed into the grand nurse and these again bear many young, the nurses, and these many other distoma. Carpenter calls this one developement, and that the vital principle was divided into the successive generations from the egg. Owen discards this, and maintains that each individual is for itself, and that in the egg a vital principle was laid up to fecundate itself for the successive generations. If so, then, every willow twig ought to have some laid up

vital principle. The vital principle is no more than exists in every cell and can be reproduced by the cell. Generation and Nutrition an identical.— This branch is called Parthenogenesis. As the egg passes the fallopian tubes it is surrounded by a secretion which forms the chorion; prolongations form, called villi. The uterus also is covered by a secretion which makes the decidua vera having tubules lined with cells into which dip the villi of the chorion, thus by an interchange of cell contents between the uterus and embryo, diseases are communicated. In the embryo the circulation is at first carried on without a heart. This goes to show that in inflammation the capillaries have a specific power. A malformation depends on the arrest of developement in its successive Stages corresponding to some inferior animal. Secretion is cell action, by their rupture the saliva, bile and gastric juice are formed. The synovia is formed by transudation. In the ossification of bone the ossific matter is deposited 1st between the cells; within these cells others are developed and so are formed the lacunae, and in the middle of the cell the haversian canal. Cartilage is nourished by endosmose.

In digestion the body can not withstand external chemical forces, hence food is required; that containing nitrogen is histogenetic, those that contain none, respiratory. The man at the North takes his cup of fat; the man at the South his fruits. The sense of hunger and thirst depend on a nervous condition; in the former blood is wanting in the stomach, food causing a greater afflux and congestion, in the latter the blood is too stimulant, and water taken into the mouth will relieve thirst, because it supplies the conditions to the nerve.

The oxidation of a part determines the nutrition. In health there is an equilibrium of these 2 processes. When oxidation is in excess as by an irritant or other-

wise, we have inflammation, this can be reduced by determining a greater afflux of blood to the part or increasing its plasticity. A Blister raises the plasticity of the blood; calomel acts by diminishing the want for supply: Hence the fibrine of inflammation is a step towards a cure. —

After food has mixed with saliva, starchy substances, will be converted into sugar, the other substances mix with the gastric juice, after which when passing through duodenum they are mixed with the bile, which is at that time especially secreted and consisting of the carbohydrates. (Since the fluid substances pass from the stomach into the portal vein and through the liver so it is probable that the bile is formed therefrom, from the matters introduced which it is to meet and mix with again in the duodenum.)

It is then absorbed by the lacteals. The blood is formed by cell generation through the lacteals; 1st, 2nd and 3rd generations, as in the case of the semen. Peyer's and the solitary glands are similar in function to the lacteals. The villi of the intestines absorb only fatty matter. (In typhoid fever the Peyerian glands are ulcerated as an antecedent, the fever the effect of purulent absorption.) The blood is an organ, purified in the lungs. The blood corpuscle is a carrier of oxygen to the tissues and at the same time of more highly elaborated Albumen which contains potash instead of soda. The fibrine is not a higher organization but feeds the fibrous tissues. (The white corpuscle may be feeding the fatty tissues.) If nutrition in inflammation be cut off, gangrene would result.

Qualitative changes of the blood, such as we cannot distinguish in the exanthemata, and miasmata he admits. Let others show what the animal poison is. Diseases of acclimation and those peculiar to certain ages are explained that the system is then placed under entirely

new conditions and that the organization is to undergo a revolution to be adapted to the external influences. Zymotic poisons act like ferments. The impulse of the heart is caused by the impulse of the current of blood in the opposite direction as is illustrated by the rotation water mill. The heart contracts in virtue of the blood which rushes in through the coronary arteries, when the blood is forced out it dilates and contracts again after the blood has returned. Irritability is but a term. The heart is but a hydraulic machine; the blood in the capillaries circulates in virtue of molecular change. Muscles furnish their own power to contract; stimulating a property is absurd. The regulator of muscular action, does it by regulating oxidation. The brain transmits no influence to the muscle: Morse's telegraph. Organic action is independent of the nervous system still influenced by it. The latter regulates molecular change and thereby nutrition.

Chemistry.

The examination of objects in nature, as to their physical properties, belongs to the science of natural philosophy. The study of them, as to what changes they are capable of undergoing, and what new combinations they might enter into; or what new properties they might acquire belongs to chemistry. Or chemistry may be said to be, the study of chemical affinity. The phenomena which mark chemical affinity and change, are the evolution of light, heat and electricity, change of color and state. The chemical nomenclature comprises 62 bodies, divisible into metallic and nonmetallic, of the nonmetallic are 1st those of a gaseous nature, Oxygen, Hydrogen. Nitrogen. Chlorine, Fluorine and Bromine. Those which are inflammable; Phosphorus, Sulphur, Selenium & Tellurium. Carbon, Boron; those of a stony nature: Antimony and Arsenic; of a metallic kind: Iodine. The metallic are: 1st

those derived from the alkalis. Sodium, Potassium, Lithium and Ammonium. Metals of the alkaline earths; Barium, Strontium, Calcium, Magnesium. Earths proper: Aluminium, Gluzium, Yttrium, Erbium, Terbium, Zirconium, Norium, Thorium, Cerium, Lanthanum, Dydymium. Metals, whose oxides form strong bases: Manganese, Iron, Chromium, Nickel, Cobalt, Copper, Zinc, Bismuth, Lead, Uranium. Metals whose oxides are weak bases or acids: Vanadium, Tungsten, Molybdenum, Tantalum, Niobium, Pelobium, Titanium, Tin, Osmeum. Metals whose oxides are reduced by heat alone: Gold, Mercury, Silver, Platinum, Palladium, Iridium, Ruthenium, Rhodium. Chemical symbols. O, H, N, C, B, Si, S, Se, Te, Ch, Br, I, Fl, P, As, St. —K, Na, Li, N, H4 —Ba, Sr, Ca, Mg. —Al, Gl, Y, Er, Tb, Zr, Nor, Th, Ce, La, Dy, —Mn, Fe, Cr, Ni, Co, Cu, Zn, Cd, Bi, Pl, U. —V, Ta, Nb, Pe, Ti, Sn, Os. —Au, Hg, Ag, Pt, Pd, Ir, Ru, Rh.

Arsenic.

Sulphuretted hydrogen passed through a solution of Arsenic will give a yellow precipitate: so will a solution of ammoniated Nitrate of Silver. Ammoniated sulph. of copper will give Sheel's green. The ammonia is to be added carefully until the previously formed precipitate is redissolved. Marsh's test is the generation of hydrogen and passing it through the suspected liquid. When arsenuretted hydrogen is formed which will give a violet red faint flame by holding a lamp beneath the tube. Arsenic will be deposited and the hydrogen pass off. This is to be dissolved in nitric acid and submitted to the three tests. When dissolved by nitric acid it becomes arsenic acid, having different characteristics. Antimony behaves much the same way but the same, deposits the Antimony on both sides: and the sulph. hydrogen forms a brownish precipitate. ———

Veneral disease.

By Dr. Pope. 1858.

The idea that Columbus brought this disease from America finds no longer support. It was long known to the Grecians. Gonorrhoea and syphilis can not produce another; each has its own specific virus. The period of infection varies from immediately to that of 5 days. That a prisoner took it after 5 months can not be believed. The symptoms are: a slight pricking sensation at the glans penis with a drop of bland fluid at the orifice of the urethra, there is a scalding pain on making water, the testicles, urethra and neighboring parts sympathize, giving rise to aching sensations, and sometimes there is a slight febrile reaction. The inflammation is chiefly seated in the fossa navicularis, hence a urethritis. As to the treatment, we have no specifics in this disease. Sometimes gonorrhoea gets well spontaneously, but cannot be trusted to nature; claps contracted in the year 1800 were still running in 1840. It is true, in these cases the discharge is a mere gleet, the embers of a burning fire, a slight mistake in food or a debauché will turn them into a consuming flame again.

It is also best to err on the safe side, and not allow the patient coitus; as long as gleet remains. There are 2 modes of treatment the cecrotic and antiphlogistic, in the former nitrate of silver is used, one-half drachm to the ounce of water, and injected into the urethra, this is used 1st for its modifying and antiphlogistic effect, 2nd for its forming a crust and so alleviate the ardor urinae, 3rd for its destroying the virus; should this however fail, the complaint will be aggravated thereby. The other plan is to treat it antiphlogistically as any other inflammation, purgative salts, never drastics, leeches to the perineum and fomentations. Next astringent injections,

as gr. 1-1ss of Cupri or Zinci sulph. or Arg. nitras to the ounce of water. These injections came into use, since it was discovered that, that part only healed over which the urine passed when copaiba had been administered. Generally in a few days the discharge improves, and in about 8 days the patient may seem well, but he is still to be kept under treatment for some time. No women, wine or any other excitement can be granted, or the old complaint will be reproduced. Various complications may arise as balanitis, where the glans and prepuce becomes excoriated, this is readily cured by a few application of Nit. Silv. one-half drachm to the ounce of Aqua applied with a camel hair pencil, etc.

In orchitis, or an extension of the inflammation to the globus major or minor, or empidydimis: leeches and incisions with a lancet are to be made, there is no danger even in wounding the testicle itself. If prostatitis occur apply leeches, fomentations, tartar emetic etc. In bubo of the urethra an early incision is required. True gonorrhoea may be contracted from a female menstruating, though she be not diseased.

Dr. Pope thinks it was in this way it originated.

Cordee the most painful symptom, is marked by the penis curving downwards owing to the effusion of lymph into the corpus cavernosum, though not always. A flow of blood from the urethra is considered a favorable symptom. In France the penis is forcibly straightened by a blow. To prevent cordee use camph. 20 grs, Opium 8 grs., make 18 pills, use 2 before going to bed. Females suffer much less on account of the shortness of the urethra, medicines are of little avail, and injections into the vagina have to be relied on. Sometimes there happens an extension to the bladder when the urine can not be retained for any length of time, other times it extends to the kidneys. Warts are to be clipped off and acetic acid applied. Phymosis requires the knife, paraphy-

mosis not.

The second division of the venereal disease is syphilis: divided into primary, secondary, and tertiary affection. In this also is contested for a plurality of poisons giving rise to the different varieties; this is involved in great doubt. 1st we have the simple venereal sore accompanied by very little inflammation. In about 2 days a pustule appears, which in 4 days breaks; and leaves an ulcer with red borders, in some weeks time it may granulate and cicatrice. When this sore gives rise to secondary forms it will be such as belong to the exanthemata, as roseola etc.

In this sore the nitrate of silver is to be applied, and in the 1st 4 days we may rest content that the system will not be contaminated. The 2nd form of chancre presents a sore with elevated, endurated edges. The secondary affection belongs to the papulae and pustulae, as ecthyma and lichen. The treatment is the ectrotic as the preceding. The 3rd form is the true hunterian chancre. This has very indurated edges, is hard, and a sign that the constitution is involved. The whole should be elevated and clipped away; or nitrate of silver, or nitric acid, or the acid nitrate of mercury applied. The 4th form presents the phagedenic, sloughing or black chancre, this eats rapidly into the adjoining textures. It gives rise to the large vesicular eruption as, rupia, bullae etc. while the former gives rise to scaly eruptions, as lepra, psoriasis, etc.

The phagedenic, wants to be treated locally with caustic potassa or acid nit, of mercury, internally with tonics & the iodide of Potassium while mercury is inadmissible. In the hunterian, mercury is to be pushed to a slight ptyalism and kept up, or the iodides may be used after. If the hunterian chancre give rise to bubo it is the indurated variety and is more apt to suppurate than the varieties arising from the preceding chancres. We

frequently can tell from the secondary symptoms what the primary have been and from the site of a chancre may be foretold the site of a bubo and vice versa. When a chancre is on the penis, secondary affection is more apt to follow since the lymphatics carry the virus into the pelvis. The hunterian test is, to take virus from a primary sore, or from the affected gland in a bubo and inoculate it on the thigh, if a true chancre, the specific sore will appear in a few days.

Not all sores of the penis arise from impure coition, they may be simple abrasions, or herpes which are found most frequently round the corona glandis they are difficult to treat and require anodyne applications and hydragogues. The penis may also slough from over exertion.— In the tertiary form of syphilis we have the bones affected, it however is more frequently consequent on mercury than on the affection itself.

Iodide of Potassium is the best remedy for the nocturnal pains, usually in 4 days they are relieved, when however the skin and soft parts are affected the iodide of mercury should be used. The comp. tinct of cinchonae is a valuable vehicle. When the primary chancre is hard, mercury should be used so as slightly to touch the gums, to which latter nitrate of silver ought to be applied to keep them from becoming sore. This plan may also be tried when the iodide will not do. Secondary syphilis may be communicated from the father to the child and through it to the mother, the nurse may also affect the child. Virus from a secondary sore will not give rise to the specific sore, as from the primary it will. When the throat is affected a wash of corrosive sublimate is excellent.

Notes: Glanders and farcy being not so bad as greese hoof are taken by man by drinking out of the same pail with the horse. Make use of Stimulants.

The bite of the mad dog is followed by the disease 1 in 20 times, this is because the virus is wiped off by the clothes. It comes on about the 40th day. Strangulate the part, excise, suck or cup, cauterize etc. The disease is incurable. The bite of the wasp and hornet is cured by Ammonia. The bite of the snake and viper is treated the same as the bite of a mad dog. Alcohol coagulates the albumen of the wound and thus prevents absorption.

Gunshot wounds. The shock lasts from 8 to 18 hours, amputate at commencing reaction when the large bones are shattered, the femoral artery or ischiatic nerve, or when gangrene is commencing. If gangrene commences at the toes wait for the line of demarcation, also when it takes place not for want of circulation in the part. At the upper extremities we have no hopes of saving the limb.

Fowler's views on disease.

1. Disease is a punishment for the transgression of nature's law; but a remedy is supplied in the vis med. nat. and it is only a few sins that are punished by death. This inherent curative power is further assisted by the external productions of nature, and every locality grows at the same time its remedies for its own diseases. And since the vegetable kingdom contains them in abundance and in proper dilution, why should we look further? can art supplant nature in any of its works? Especially that poison, calomel, should be banished, since it stimulates the liver only by poisoning it, which can not rid itself of it except it is over active.

It induces the liver complaint such as it is to remedy and by distroying the teeth causes incipient dyspepsie. The remarks of Chapman to his class and also those of Graham are forcible. The same applies to the

other poisons, the stronger the more harm they do, & as to depletion, if the disease is withdrawn by bleeding it is only in the same way that vitality is withdrawn, and then the energy of all the organs is spent on hoemato-sis. A remedy to be good should also act agreeable, for if it causes pain it is an other violation of nature's laws; it must be relished since nature craves its own remedies; and though bitter it will be sweet.

2. Nature's laws are those of proportion. As the universe is ruled by these laws, so are the processes of life in man. Where one exercises, he requires more breathing and food, and when one increases his food and breathing, exercise must be also increased and by increasing breathing, the other processes must also be increased. When this law is not observed disease will surely follow. When a Northerner goes south he will continue his usual diet and become sick, because his eating is too much for his breathing. But the great law of proportion is between mind and body; behold the city belle who cultivates her mind only & by inaction starves her body. The headaches, nervousness and debility, no medicines will avail but exercise, this the Lowell physician well understood when he cured a lady given up, with bread pills and exercise.

This is further exemplified in the student from the farm at college he starves his body by exercising only the mind and thus becomes sickly; not because study made him so, but because the balance between mind and body was lost. Such is also the case with precocious children and those which are consumptive. That the flower of society dies is because their minds eat up their bodies; & all unhealthy trades are so only because a part of the body is not exercised enough. To live and be healthy, one ought to use 8 hours for sleep, 8 for exercise and 8 for study.

3. On the other hand exercise and diminished supply

will induce exhaustion & make unable to withstand the outside chemical tendencies inducing disease. Thus exhausted by exercise, heat of the day, insufficient nourishment, watching on the sick, or grief. Persons are attacked by malaria, contagion, pestilence and consumption.

4. Growing youth should have the vitality greater than mentality, in order to lay a good foundation for a great superstructure; since the mind ripens much later than the body, "and late ripe late rotten." The geniuses Misses Davidson are in their graves at 15. The greatest men were the most backward when boys, look at Pat. Henry and Ad. Clark. The excess of vitality should only be expended in developing the mind. It is the last to mature.

5. Excess of carbon is the most prolific cause of disease. For this only the Northener sickens; this is what causes the summer complaint in children, they eat more than they breathe for, this is what causes consumption, and dyspepsia, not sufficient oxygen is taken in to carry off the surplus carbon. This is probably so since diseased lungs, fever sores, abscesses and pus consist of 54 per cent of carbon. Eating and breathing should be in proportion to exercise and eating, breathing & exercise in proportion to the mind.

6. When this balance of proportion is lost it may be reestablished by exercise and diet; don't we see the increased strength of the arm of the blacksmith, the voice of the chimney sweep & lecturer? For whom exercise is best suited are such as are of a consumptive habit, known by their small chest and vital capacity; their exercise should be in the open air, since the storekeeper though he may work lacks to breathe the required amount of oxygen; exercise should however not be in excess, and be given up when a sense of trembling is experienced.

With those of indigestion, the food decays in the stomach: & this putrescence is taken up into the blood falls on the lungs the weakest organ to exhale it, and so the symptoms of dyspepsia are the 1st of consumption. Constipation is the most frequent concomitant of consumption and dyspepsia therefore the bowels (an important outlet of waste) should be attended to, as to diet and their daily motion.

7. Constipation should not be removed by medicines not even by rhubarb, but by the use of a laxative diet, fruit, rye bread, corn, rhubarb, unbolted flour, oatmeal, etc. capacious drafts of water especially in the morning & if necessary injections of warm and cold water and its external application, next by motion of the bowels which is by exercising the abdominal muscles, or kneading them with the hand, and paying attention to the regular time for evacuations, so as to make it a custom. Inflammation of the stomach is another concomitant of indigestion.

8. The drink of dyspeptics should be only water man's natural beverage, tea and coffee are poisons: this water should be drank not till the food is digested and in copious drafts which will soon reduce this irritability. Dyspeptics should also eat very little "starve it out" and breathe much and make use of exercise to a degree they can bear. Lemonade is also very good and should be taken by the pint. The same course will remove hepatic derangements.

Palpitation of the heart is also caused by excess of carbonic acid in the blood for want of sufficient breathing. The blood gets thickened and obstructions arise in the head etc. causing pains. (This may also be known by observing that the heart beats quicker in inspiration in persons diseased?) The same means which will improve the general health will remove the affection.

Consumption.

Consumption is no more than an obdurate cold: Tubercles the result of most chronic diseases, are curable in other organs, why should they not be so in the lungs? In dyspepsia the food decays in the stomach and the putrid matter is thrown upon the weakest organs the the lungs to be excreted, causing phlegm, obstructions and suppuration and at last real consumption. The same way many foreign matters, as alcohol, being inimical to life are to be thrown off from the lungs.

So it is with other affections, they may be symptomatic and at last become real. The 1st thing to be observed is that the patient eat little, since his lungs are small he cannot burn up the carbon; 2ndly nature should be imitated (where she attempts to remove impurities by night sweats, and so relieve the lungs.) But prevention is best.

Prevention of consumption.

The patient of spare habit and a small contracted chest; should practice the general laws of health to change the predisposition, 1st, avoid trades which cramp the lungs; 2nd enlarge the chest by practicing inflation; 3rd use exercise in the open air; and harden yourself, 4th, excite the skin to action to relieve the lungs; 5th make use of no articles of diet which are to be thrown off from the lungs as tea, coffee and alcohol: 6th guard against indigestion, and keep open the bowels, in exercise never overdo. Children of consumptive parents should run into their 20. All should be expended in improving the physical body, they should bathe, wrestle and hollow.

Disordered nerves.

The heart, liver, stomach etc. have all their cerebral

centre in the cerebellum, so have the nerves their centre in the cerebrum, therefore on top the head behind veneration there is a feeling of soreness. This state should be overcome by paying attention to the general health: dyspepsia which is most frequently the cause should first be removed, next bathing, friction and much sleep. They can not sleep too much, all cerebral stimulants coffee, tea, alcohol should be avoided, so grief and severe mental application.

Insanity is the excessive excitability and overaction of the nervous system. The victims are generally the flower of the community; an idiot will never be crazy. Remedies as subdue inflammations are best suited here, the cold douch etc. But to prevent it persons predisposed should become farmers, increase their physical powers and leave the mental dormant; avoid the stumbling block of their fathers, all stimulants should be abstained from, and a vegetable diet used to keep the body open.

The water cure is something calculated to be of immense service in the cure of disease: and to supersede most remedial agents. By it we clean the stomach and purify the blood; revive the whole system of man: it is the best agent to reduce fever and inflammation, it is destined to lay the lancet and medicines on the shelf of by-gone ages.

The muscular system, as well as the other organs, has its cerebral centres, which seem to be at the junction of the 2 cerebellar lobes at the nape of the neck just as the stomach operates by alimentiveness. When the nerves between brain and stomach are cut digestion is destroyed and taste lost: amativeness has its pleasure only in the brain, why should not all other organs as heart etc. have their cerebral organ? This is further confirmed

by the fact that all the nerves emanate from the brain, hence the cerebellum is the centre of the physical man. The near connection between cerebrum & cerebellum show the intimate relationship between body & mind and their reciprocity. Consciousness resides in the corpus collosum, the seat of the soul.

1. The world is made up of causes and effects. — Inflexible laws govern all nature. According to these fixed laws, man is made to be happy; and be a link in that infinite causation; which ordains everything wisely. Man is not born to suffer & be sick, this bespeaks of a violation of nature's laws and is no more than could be expected from them; it is a punishment for the physiological sins; and the nursery is to fortify us against new transgressions; on the other hand happiness and health is held out for the due obedience to the laws.

2, Sickness and death are not a dispensation of providence but the result of sin; trespassing nature's laws, and dying is no less than suicide. As the sun rises in accordance with these laws; so does death follow with no more agency of providence.

3, These laws are open to investigation and consequent obedience; hence the importance of a physiological and phrenological education.

4. Man is made up of body and mind, and the brain is the link which connects them and makes them inter-related; that what affects the one affects the other, the laws act equally, there is a universal sympathy; "a healthy mind can exist only in a healthy body" when the body is diseased the mind becomes weak and gloomy and when the brain is diseased the body is also affected; and so when the mind is gloomy, secretion will be impeded in the liver and affect the whole person.

5, This discloses one grand law, that; as we affect the body by improving its health so thereby we will affect

the brain & strengthen it. The importance of watching the bodily health is most obvious.

1. The food of man should be vegetable: in this many physiologists concur: 1st because nature has furnished all animals with teeth adapted to the food they eat: and man has his more adapted (even than the monkey who lives without meat) to the use of esculent roots & fruits.

2. Meat inflames the organs of combativeness and destructiveness which is necessary to killing the animals and blunts conscientiousness.

3. Meat is powerfully tonic and stimulent like alcohol, tea and tobacco: but stimulates only to exhaust, to live too fast; as in a hot house.

4. It is not in accordance with nature's economy: since 10 vegetable eaters could live where 1 meat eater.

5. It does not give more force and strength: A bible christian of Philadelphia was the strongest man there: and what can the Indian do.

6. On the other hand vegetables make nimble, look on the gnomes and dwarfs, more amiable (take the chinses,) more long lived and healthy (the bible christians.)

The whole machine runs more smoothly and not so much is lost by friction: look at Sylvester Graham! —

7. Butter contains also a great amount of carbon and gives rise to bile and corrupts the stomach especially if it has got rancid. —

1. Exercise makes strong: this law applied we are enabled to increase our strength of mind and body indefinitely. Milo, etc.

2. Blue veins are a sign of insufficient breathing and carbon in excess.

1. Man's superiority in all creation is for his intellect: though his physical abilities may be very great, yet without intellect what would they be? "Knowledge is

power". A retentive memory becomes all important, but in this most are very deficient, it however can be improved indefinitely by exercise and presenting to it its natural stimulus. Burrit, and the recorder of N. Y.

2. A division is to be made into the physico-perceptives as predominant in Astor and Burrit, for examining the physical properties of things; and the reflectives: Franklin, Melanthon, Pitt, tracing out causalities and relations and especially engaged in thinking. The preceptives with large acquisitiveness prompt to trading and merchandizing: Astor; with large constructive to inventions as in Biglow and Fulton, with ideality and the reflectives, to astronomy and literature as in Hershel. Michael Angelo, Buffon, Cuvier, Hitecock. (The faculties may be strengthened by improving the health and there are as many kinds of memory as there are organs, one may remember one thing and not the other).

--- Individulity. ---

This is the organ of observation; it prompts us to individualize; and see how many constituents a thing is composed of. It wants to see and examine; this organ should be exercised by opening our eyes and ears and paying attention. It is very large in children therefore children should not be forced to keep in the eyes, they should be taught through this faculty by showing and explaining to them and thereby cause the reflective faculties. Forcing them to look on the book will weaken the understanding, since observation must precede all thinking, the very door of knowledge is thereby shut up.

It is a law of nature that things we are shown, as a skull, we can remember much better its structure; and pictures teach more than the text. This organ we should apply to the study of human nature, to which phrenology lends its especial incentives, especially when

we need not be afraid of staring at a person. "Learn something from every body".

(I think a person may be very eager for observing one thing and wanting to know all about it while for other things he cares nothing at all, so he may hear and feel one thing while he does not mind others; this is certainly from being prompted by the higher faculties, but it shows that there is no single organ of observation; and moreover we observe by hearing just as well; and hearing and sight and all the senses cannot have any connection with the portion of brain above the nose, a gormand and a drone might observe some nice dishes. As many memories as the author thinks so many observations are there undoubtedly.)

Form.

This faculty enables man to take cognizance of the form and shapes of things, helps to remember faces once seen, and the form of other characters as letters, the child which has it large learns soon to read; and the proofreader takes cognizance only of the shapes of the letters; not so much by rote. The rote system should be wholly abolished in learning to spell; its culture is very important and one should do this by practice as the circus door waiter.

Size

Is another faculty located in the superciliary arch; and it takes especial cognizance of large and small. It is made use of in the study of Geometry. Children should be taught that science by blocks etc. It should be educated by applying it to practice.

Color.

By it we perceive colorings, and delight in paintings; it should be educated in children by fine paintings.

(These three faculties, are they more than psychical attributes by which observation acts? What could individuality observe were it not for the shape, size and color of things. Individuality, and these organs small, would be an utter impossibility. Are not these physical properties affecting the optical apparatus? and to be deficient in them must be deficient in sight; blind to colors is blind to everything. Moreover they enter one eye; so it is strange to conceive how these impressions can be made on different organs where there is no feasible connection.)

Weight.

This organ is to estimate weight and keep the centre of gravity; large in butchers and dealers in commodities. It should be enlarged by practice & children ought to be let climb in order to increase weight that they may keep their balance. (Can weight else be found out then by practice? By taking the impression of a certain bulk of material which the eye sees [observation]) and reduces this to a certain and known quantity of weight, this is the point from which to compare the next time. What child knows anything intuitively of weight? When a merchant judges how much wheat there is in a heap he 1st takes the size and by a calculation of how many times a certain known weight and quantity will go into the whole, he arrives at the answer. Hence observation by the eye and touch and calculation, are weight.)

Order.

The faculty which likes to have things in order is especially large in good housewives; and feels pain at seeing chaos & disorder. It is located outside the middle of the

supraorbital ridge. This should be cultivated by being methodical, and children should be taught order in their books and clothes so that they might dress in the dark. (I think the reflective faculties which know that order is most prudent and best, prompts to this orderly arrangement. And by the forming of orderly habits from youth).

Calculation.

(Calculation takes up 2 premises and starts by a reasoning process to a third unknown: the material is there, and thought, judgement and comparison can only make any thing of it. A man that can do hard sums: could he be deficient in the reflective faculties? impossible.) It is especially concerned in mental arithmetic, and is especially powerful in some persons that can keep accounts. Deshong proposes to calculate any sum immediately by his marvel of calculation (a short hand system). A cash business would increase mental culture and do away with the drudgery of so many clerks and keep many from failing. The present system requires large profits to cover its heavy losses, commodities would also be cheaper. The honest payer has to support the others which are not willing to pay their debts, as town pauper. No body should have a thing before he earned it.)

Locality.

This is the organ for recognising place, large in Captain Cook, it should be cultivated by geography or geology. Phrenology gives an organ for every property of matter: indivisibility: shape, dimension, momentum (order, color locality,) and these organs are all located above the eye through which all these properties are perceived, showing their intimate relation, how beautiful! —

Eventuality

remembers passed events; it instills a love for retaining things heard or seen, it loves experiments. Memory should be strengthened by exercise, and this can be done to a degree unlimited. As confirmation we have Mr. Mc'guingan of Milton, Pa. The diary made Fowler himself and others, memory seems to be made so that every thing might be retained once seen, proof fast, were it not for general neglect of remembering. Mc'guingan, his memory bad till 25, commenced by recollecting Xenophen's life by cyrus and gained wonderfully. The same is the case with Post masters. One should review the events of the day, of childhood and general occurrences Children should be taught to remember early by telling them stories and showing them experiments before they are able to read; which they should not, be taught too early. The Indians have also good memories.

Time

perceives the lapse of time, keeps time at singing. Periodicity prevades all nature, eating and sleeping are affected by it; we become hungry at regular hours and so we wake. This organ is left uncultivated by timekeepers; which should only be secondary. Time with conscientiousness engenders promptness so essential to a business man. Time is money and God's most precious gift. It should be well employed; that is a duty, and not be squandered in doing trifles or things wholly useless; things most important should be done first; also should we not allow our time to be taken away by idle company and so on. It is especially important to make use of our time for forming correct habits for the next world; and improving our character since this life is only the commencement of time infinite to come. Children

should be taught early periodicity in eating, drinking and sleeping to avoid troublesomeness.

— Tune. —

Tune has a pleasure for music, and loves all harmonious sounds; it is a most powerful stimulus to all the other faculties if directed towards them; mark the soldier and martial music; it refines the feelings and enhances the sentiments as evinced by their fine physical constitutions.

It should be cultivated in the youth not by singing and playing only from note but by rote, and better texts should be selected; notes should only be secondary and color applied to them is an improvement. The voice and wind instruments should be preferred since they expand the lungs. It tends to keep from vice; it is a great peace-maker among children, and keeps them good.

Exercise.

Exercise is friction, or the rubbing of one part against or over another. The result thereof is heat and where there is heat, there is increased chemical change, where there is increased chemical change, ~~there is~~ increased force, where there is more force there must be more nutrition.

Hence friction produces heat,

Heat produces change,

Change produces force,

Force produces nutrition.

Hence friction properly applied evidently produces nutrition.

Exercise or friction may take place within the organ or tissue in virtue of its own inherent properties and be

active or it may be called into action by outside agencies and wholly independent of the individual and be passive.

Evil influence of violent exercise.

Exercise is the moving of weight, weight can only be moved by force, hence exercise is the expression or consumption of force.

The *blood* contains principally the *material* for the development of force, hence as the material of force becomes exhausted, the blood has to move so much faster as to make up in quantity what it has lost in quality. Now the whole amount of blood (16 pints) move over the body and then through the lungs once in 90 seconds, or 40 times in 1 hour, so it becomes evident that the blood in active exercise moving at the rate of 60 times an hour, throws $\frac{1}{2}$ more labor on the lungs in its passage. The blood after having passed over the body has become entirely useless for the nutrition until it has been renovated in the lungs, here it has to give out a gas which it collected all over the body (the result of exertion, or the expression of force) and take in another gas, (the cause of force). Now when this interchange of gases does not take place in the same ratio that the blood flows, then there will be a necessary waiting of a part of the blood, the result of which will be mischief to the lungs. The mischief resulting from overexertion may be of a threefold nature.

1st. Impairment of the smoothness of the internal surface of the arteries, affording room for the collection of foreign matters.

2nd. The filling up of the varices or bulgings of the arteries, takes away from the room for air in the chest, while at the same time it is obstructing the channels for air and blood.

3rd. While it is arresting the proper blood-flow through the lungs; the blood so arrested will die or decay, thus a portion of the life of the individual will be taken away and this decayed blood will act as a foreign body or poison to the whole system.

Inflammation.

Inflammation is caused by something foreign to the system, by an irritant; this causes a hypertrophy of the part, of the bloodvessels, of the muscular tissue and of the fibrous tissue. Pusglobules next form about the irritament softening this. In a boil it is a diseased hairsack. Fever is not set up until the lymphatics carry the serum from an inflamed part into the blood. Further the heat of an inflamed part changes normal parts into poison.

When a fresh wound is made, the poison is immediately absorbed. The swelling extends centripitally and is carried forward by the lymphatics. The pusglobules are generally met with in lumps.

The areolar stroma or connective tissue which is being dissolved constitutes the core, this is made up of all kinds of tissues that have lost their vitality, veins, arteries, nerves, connective tissue which have undergone a necrosis and require to be expelled.

For the purpose of this expulsion, probably a hundred times the pusglobules are formed, that would be necessary to distroy or dissolve the dead portion.
